Lauryl Sulphate HiVeg™ Broth (Lauryl Tryptose HiVeg™ Broth) MV080

Intended use
Recommended for the detection of coliforms in water, dairy products and other foods.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiVeg™ hydrolysate No. 1</td>
<td>20.000</td>
</tr>
<tr>
<td>Lactose</td>
<td>5.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Dipotassium hydrogen phosphate</td>
<td>2.750</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>2.750</td>
</tr>
<tr>
<td>Sodium lauryl sulphate (SLS)</td>
<td>0.100</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>6.8±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions
Suspend 35.6 grams in 1000 ml purified/distilled water. Heat if necessary to dissolve the medium completely. Distribute into tubes containing inverted Durham's' tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C.

Principle And Interpretation

Lauryl Tryptose HiVeg™ Broth is prepared by replacing tryptose with HiVeg™ hydrolysate No.1, making the medium free of BSE/TSE risks. This can be used as an alternative for Lauryl Tryptose Broth which was formulated by Mallmann and Darby (8) and is recommended by APHA and ISO committee (5) for the presumptive detection of coliforms in water, effluent or sewage by MPN test and for the detection of coliforms in foods (1). Coliforms are considered to be members of Enterobacteriaceae, which grow in presence of bile salts and produce acid and gas from lactose within 48 hours at 37°C. They generally show β-galactosidase activity (4). Cows demonstrated that inclusion of sodium lauryl sulphate (SLS) makes the medium selective for coliform bacteria (8). Aerobic spore bearers are completely inhibited. This media has also been reported to provide a higher colon index than the confirmatory standard methods media and the gas production in this not only acts as a presumptive test, but also as a confirmatory test for the presence of coliforms, in the routine testing of water. Aerobic spore-bearers are completely inhibited in this medium.

HiVeg™ hydrolysate No.1 provides essential growth substances, such as nitrogen and carbon compounds, sulphate and trace ingredients. The potassium phosphates provide buffering system, while sodium chloride maintains osmotic equilibrium. For inoculum of 1 ml or less, use single strength medium. For inocula of 10 ml or more, double strength or proportionate medium should be prepared. After inoculation, incubate the tubes at 35-37°C for 24 to 48 hours. For every tube showing fermentation (primary fermentation), inoculate two tubes of Lauryl Tryptose HiVeg™ Broth from the tube showing primary fermentation and incubate these tubes at 35-37°C and 44°C respectively. If there is fermentation in the tube incubated at 44°C after 8 to 24 hours, perform indole test by adding Kovac's reagent. A positive indole test in a broth tube showing gas production at 44°C indicates the presence of Escherichia coli. If no fermentation occurs in the tube incubated at 35-37°C after 24 hours, the primary fermentation is assumed to be due to organisms other than coliforms. Broth becomes cloudy or forms precipitate if stored at 2-8°C, but it should get cleared at room temperature.

Type of specimen
Food and dairy samples; Water samples, Clinical samples- faeces.
Specimen Collection and Handling
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (6,7).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9,10).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards(1,4).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions
In Vitro diagnostic Use. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations
1. Due to nutritional variations, some strains may show poor growth.

Performance and Evaluation
Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control
Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light yellow coloured, clear solution without any precipitate

Reaction
Reaction of 3.56% w/v aqueous solution at 25°C. pH : 6.8±0.2
pH
6.60-7.00

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Gas Production</th>
<th>Indole production (44°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escherichia coli ATCC 25922 (00013*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>negative reaction</td>
<td>negative reaction, no colour development / cloudy ring</td>
</tr>
<tr>
<td># Klebsiella aerogenes ATCC 13048 (00175*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>positive reaction</td>
<td>negative reaction, no colour development / cloudy ring</td>
</tr>
<tr>
<td>Enterococcus faecalis ATCC 29212 (00087*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>positive reaction</td>
<td>negative reaction, no colour development / cloudy ring</td>
</tr>
<tr>
<td>Salmonella Typhimurium ATCC 14028 (00031*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>negative reaction</td>
<td>negative reaction, no colour development / cloudy ring</td>
</tr>
<tr>
<td>Staphylococcus aureus subsp aureus ATCC 25923 (00034*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key : (#) Formerly known as Enterobacter aerogenes (*) corresponding WDCM numbers

Storage and Shelf Life
Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use.

Product performance is best if used within stated expiry period.

Please refer disclaimer Overleaf.
Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).

Reference